

SEQUENCE LISTING

```

<110> Pettersson, Dan
      Fuglsang, Claus Crone
      Wu, Wenping

<120> Thermostable Enzyme Compositions

<130> 10254.204-US

<140> 10/500,477
<141> 2004-06-29

<160> 18

<170> PatentIn version 3.3

<210> 1
<211> 1008
<212> DNA
<213> Thermoascus aurantiacus

<220>
<221> sig_peptide
<222> (1)..(90)

<220>
<221> CDS
<222> (1)..(1005)

<220>
<221> mat_peptide
<222> (91)..(1005)

<400> 1
atg aag ctc ggc tct ctc gtg ctc gct ctc agc gca gct agg ctt aca      48
Met Lys Leu Gly Ser Leu Val Leu Ala Leu Ser Ala Ala Arg Leu Thr
-30           -25           -20           -15

ctg tcg gcc cct ctc gca gac aga aag cag gag acc aag cgt gcg aaa      96
Leu Ser Ala Pro Leu Ala Asp Arg Lys Gln Glu Thr Lys Arg Ala Lys
-10           -5            -1   1

gta ttc caa tgg ttc ggt tcg aac gag tcc ggt gct gaa ttc gga agc      144
Val Phe Gln Trp Phe Gly Ser Asn Glu Ser Gly Ala Glu Phe Gly Ser
5           10           15

cag aac ctt cca gga gtc gag gga aag gat tat ata tgg cct gat ccc      192
Gln Asn Leu Pro Gly Val Glu Gly Lys Asp Tyr Ile Trp Pro Asp Pro
20          25           30

aac acc att gac aca ttg atc agc aag ggg atg aac atc ttt cgt gtc      240
Asn Thr Ile Asp Thr Leu Ile Ser Lys Gly Met Asn Ile Phe Arg Val
35          40           45           50

ccc ttt atg atg gag aga ttg gtt ccc aac tca atg acc ggc tct ccg      288

```

Pro Phe Met Met Glu Arg Leu Val Pro Asn Ser Met Thr Gly Ser Pro			
55	60	65	
gat ccg aac tac ctg gca gat ctc ata gcg act gta aat gca atc acc			336
Asp Pro Asn Tyr Leu Ala Asp Leu Ile Ala Thr Val Asn Ala Ile Thr			
70	75	80	
cag aaa ggt gcc tac gcc gtc gat cct cat aac tac ggc aga tac			384
Gln Lys Gly Ala Tyr Ala Val Val Asp Pro His Asn Tyr Gly Arg Tyr			
85	90	95	
tac aat tct ata atc tcg agc cct tcc gat ttc cag acc ttc tgg aaa			432
Tyr Asn Ser Ile Ile Ser Ser Pro Ser Asp Phe Gln Thr Phe Trp Lys			
100	105	110	
acg gtc gcc tca cag ttt gct tcg aat cca ctg gtc atc ttc gac act			480
Thr Val Ala Ser Gln Phe Ala Ser Asn Pro Leu Val Ile Phe Asp Thr			
115	120	125	130
aat aac gaa tac cac gat atg gac cag acc tta gtc ctc aat ctc aac			528
Asn Asn Glu Tyr His Asp Met Asp Gln Thr Leu Val Leu Asn Leu Asn			
135	140	145	
cag gcc gct atc gac ggc atc cgt tcc gcc gga gcc act tcc cag tac			576
Gln Ala Ala Ile Asp Gly Ile Arg Ser Ala Gly Ala Thr Ser Gln Tyr			
150	155	160	
atc ttt gtc gag ggc aat tcg tgg acc ggg gca tgg acc tgg acg aac			624
Ile Phe Val Glu Gly Asn Ser Trp Thr Gly Ala Trp Thr Trp Thr Asn			
165	170	175	
gtg aac gat aac atg aaa agc ctg acc gac cca tct gac aag atc ata			672
Val Asn Asp Asn Met Lys Ser Leu Thr Asp Pro Ser Asp Lys Ile Ile			
180	185	190	
tac gag atg cac cag tac ctg gac tct gac gga tcc ggg aca tca gcg			720
Tyr Glu Met His Gln Tyr Leu Asp Ser Asp Gly Ser Gly Thr Ser Ala			
195	200	205	210
acc tgc gta tct tcg acc atc ggt caa gag cga atc acc agc gca acg			768
Thr Cys Val Ser Ser Thr Ile Gly Gln Glu Arg Ile Thr Ser Ala Thr			
215	220	225	
cag tgg ctc agg gcc aac ggg aag aag ggc atc atc ggc gag ttt gcg			816
Gln Trp Leu Arg Ala Asn Gly Lys Lys Gly Ile Ile Gly Glu Phe Ala			
230	235	240	
ggc gga gcc aac gac gtc tgc gag acg gcc atc acg ggc atg ctg gac			864
Gly Gly Ala Asn Asp Val Cys Glu Thr Ala Ile Thr Gly Met Leu Asp			
245	250	255	
tac atg gcc cag aac aca gac gtc tgg act ggc gcc atc tgg tgg gcg			912
Tyr Met Ala Gln Asn Thr Asp Val Trp Thr Gly Ala Ile Trp Trp Ala			
260	265	270	
gcc ggg ccg tgg tgg gga gac tac ata ttc tcc atg gag ccg gac aat			960
Ala Gly Pro Trp Trp Gly Asp Tyr Ile Phe Ser Met Glu Pro Asp Asn			

275	280	285	290	
ggc atc gcg tat cag cag ata ctt cct att ttg act ccg tat ctt tga				1008
Gly Ile Ala Tyr Gln Gln Ile Leu Pro Ile Leu Thr Pro Tyr Leu				
295	300	305		
<210> 2				
<211> 335				
<212> PRT				
<213> Thermoascus aurantiacus				
<400> 2				
Met Lys Leu Gly Ser Leu Val Leu Ala Leu Ser Ala Ala Arg Leu Thr				
-30	-25	-20	-15	
Leu Ser Ala Pro Leu Ala Asp Arg Lys Gln Glu Thr Lys Arg Ala Lys				
-10	-5	-1	1	
Val Phe Gln Trp Phe Gly Ser Asn Glu Ser Gly Ala Glu Phe Gly Ser				
5	10	15		
Gln Asn Leu Pro Gly Val Glu Gly Lys Asp Tyr Ile Trp Pro Asp Pro				
20	25	30		
Asn Thr Ile Asp Thr Leu Ile Ser Lys Gly Met Asn Ile Phe Arg Val				
35	40	45	50	
Pro Phe Met Met Glu Arg Leu Val Pro Asn Ser Met Thr Gly Ser Pro				
55	60	65		
Asp Pro Asn Tyr Leu Ala Asp Leu Ile Ala Thr Val Asn Ala Ile Thr				
70	75	80		
Gln Lys Gly Ala Tyr Ala Val Val Asp Pro His Asn Tyr Gly Arg Tyr				
85	90	95		
Tyr Asn Ser Ile Ile Ser Ser Pro Ser Asp Phe Gln Thr Phe Trp Lys				
100	105	110		
Thr Val Ala Ser Gln Phe Ala Ser Asn Pro Leu Val Ile Phe Asp Thr				
115	120	125	130	
Asn Asn Glu Tyr His Asp Met Asp Gln Thr Leu Val Leu Asn Leu Asn				
135	140	145		

Gln Ala Ala Ile Asp Gly Ile Arg Ser Ala Gly Ala Thr Ser Gln Tyr  
150 155 160

Ile Phe Val Glu Gly Asn Ser Trp Thr Gly Ala Trp Thr Trp Thr Asn  
165 170 175

Val Asn Asp Asn Met Lys Ser Leu Thr Asp Pro Ser Asp Lys Ile Ile  
180 185 190

Tyr Glu Met His Gln Tyr Leu Asp Ser Asp Gly Ser Gly Thr Ser Ala  
195 200 205 210

Thr Cys Val Ser Ser Thr Ile Gly Gln Glu Arg Ile Thr Ser Ala Thr  
215 220 225

Gln Trp Leu Arg Ala Asn Gly Lys Gly Ile Ile Gly Glu Phe Ala  
230 235 240

Gly Gly Ala Asn Asp Val Cys Glu Thr Ala Ile Thr Gly Met Leu Asp  
245 250 255

Tyr Met Ala Gln Asn Thr Asp Val Trp Thr Gly Ala Ile Trp Trp Ala  
260 265 270

Ala Gly Pro Trp Trp Gly Asp Tyr Ile Phe Ser Met Glu Pro Asp Asn  
275 280 285 290

Gly Ile Ala Tyr Gln Gln Ile Leu Pro Ile Leu Thr Pro Tyr Leu  
295 300 305

<210> 3  
<211> 21  
<212> PRT  
<213> Thermoascus aurantiacus

<220>  
<221> MISC\_FEATURE  
<223> N-terminal peptide  
  
<220>  
<221> MISC\_FEATURE  
<222> (2)..(2)  
<223> Xaa in position 2 means any amino acid  
  
<400> 3

Asn Xaa Leu Val Phe Thr Ser Phe Gly Ser Asn Glu Ser Gly Ala Glu  
1                   5                   10                   15

Phe Gly Ser Gln Asn  
20

<210> 4  
<211> 20  
<212> DNA  
<213> Artificial

<220>  
<223> Primer

<220>  
<221> misc\_feature  
<222> (9)..(9)  
<223> n is a, c, g, or t

<220>  
<221> misc\_feature  
<222> (12)..(12)  
<223> n is a, c, g, or t

<220>  
<221> misc\_feature  
<222> (15)..(15)  
<223> n is a, c, g, or t

<400> 4  
aaygartcng gngcngaatt

20

<210> 5  
<211> 20  
<212> DNA  
<213> Artificial

<220>  
<223> Primer

<220>  
<221> misc\_feature  
<222> (9)..(9)  
<223> n is a, c, g, or t

<220>  
<221> misc\_feature  
<222> (12)..(12)  
<223> n is a, c, g, or t

<220>

<221> misc\_feature  
<222> (15)..(15)  
<223> n is a, c, g, or t

<400> 5  
aaygartcng gngcngagtt

20

<210> 6  
<211> 20  
<212> DNA  
<213> Artificial

<220>  
<223> Primer

<220>  
<221> misc\_feature  
<222> (12)..(12)  
<223> n is a, c, g, or t

<220>  
<221> misc\_feature  
<222> (15)..(15)  
<223> n is a, c, g, or t

<400> 6  
aaygaragkg gngcngaatt

20

<210> 7  
<211> 20  
<212> DNA  
<213> Artificial

<220>  
<223> Primer

<220>  
<221> misc\_feature  
<222> (12)..(12)  
<223> n is a, c, g, or t

<220>  
<221> misc\_feature  
<222> (15)..(15)  
<223> n is a, c, g, or t

<400> 7  
aaygaragkg gngcngagtt

20

<210> 8  
<211> 18  
<212> DNA

```

<213> Artificial
<220>
<223> Primer
<400> 8
aagatgtact gggaaatg 18

<210> 9
<211> 21
<212> DNA
<213> Artificial

<220>
<223> Primer
<400> 9
tggtttagat tgaggactaa g 21

<210> 10
<211> 21
<212> DNA
<213> Artificial

<220>
<223> Primer
<400> 10
gattatagaa ttgttagtac t 21

<210> 11
<211> 19
<212> DNA
<213> Artificial

<220>
<223> Primer
<400> 11
agagccggtc attgagttg 19

<210> 12
<211> 20
<212> DNA
<213> Artificial

<220>
<223> Primer
<400> 12
atgaagctcg gctctctcgt 20

```

```

<210> 13
<211> 21
<212> DNA
<213> Artificial

<220>
<223> Primer

<400> 13
cttgtctcct gtctcggtca c

<210> 14
<211> 225
<212> PRT
<213> Thermomyces lanuginosus

<220>
<221> mat_peptide
<222> (31)..(225)

<400> 14

Met Val Gly Phe Thr Pro Val Ala Leu Ala Ala Leu Ala Ala Thr Gly
-30           -25           -20           -15

Ala Leu Ala Phe Pro Ala Gly Asn Ala Thr Glu Leu Glu Lys Arg Gln
-10           -5           -1   1

Thr Thr Pro Asn Ser Glu Gly Trp His Asp Gly Tyr Tyr Tyr Ser Trp
5             10            15

Trp Ser Asp Gly Gly Ala Gln Ala Thr Tyr Thr Asn Leu Glu Gly Gly
20            25            30

Thr Tyr Glu Ile Ser Trp Gly Asp Gly Gly Asn Leu Val Gly Gly Lys
35            40            45            50

Gly Trp Asn Pro Gly Leu Asn Ala Arg Ala Ile His Phe Glu Gly Val
55            60            65

Tyr Gln Pro Asn Gly Asn Ser Tyr Leu Ala Val Tyr Gly Trp Thr Arg
70            75            80

Asn Pro Leu Val Glu Tyr Tyr Ile Val Glu Asn Phe Gly Thr Tyr Asp
85            90            95

Pro Ser Ser Gly Ala Thr Asp Leu Gly Thr Val Glu Cys Asp Gly Ser

```

100 105 110

Ile Tyr Arg Leu Gly Lys Thr Thr Arg Val Asn Ala Pro Ser Ile Asp  
115 120 125 130

Gly Thr Gln Thr Phe Asp Gln Tyr Trp Ser Val Arg Gln Asp Lys Arg  
135 140 145

Thr Ser Gly Thr Val Gln Thr Gly Cys His Phe Asp Ala Trp Ala Arg  
150 155 160

Ala Gly Leu Asn Val Asn Gly Asp His Tyr Tyr Gln Ile Val Ala Thr  
165 170 175

Glu Gly Tyr Phe Ser Ser Gly Tyr Ala Arg Ile Thr Val Ala Asp Val  
180 185 190

Gly  
195

<210> 15  
<211> 439  
<212> PRT  
<213> Peniophora lycii

<220>  
<221> mat\_peptide  
<222> (31)..(439)

<400> 15

Met Val Ser Ser Ala Pro Ala Pro Ser Ile Leu Leu Ser Leu Met Ser  
-30 -25 -20 -15

Ser Leu Ala Leu Ser Thr Gly Pro Ser Pro Val Ala Ala Gly Leu Pro  
-10 -5 -1 1

Ile Pro Ala Gly Ala Thr Ser Ala Thr Gly Pro Thr Ala Pro Pro Pro  
5 10 15

Pro Val Gly Pro Thr Ala Ala Pro Pro Gly Gly Cys Thr Val Thr Gly  
20 25 30

Val Ala Leu Ile Gly Ala His Gly Ala Ala Thr Pro Thr Ser Gly Ala  
35 40 45 50

Ala Ser Ala Gly Val Ala Ala Val Ala Leu Ile Gly Met Ala Ala Pro  
55 60 65

Pro Thr Ala Pro Leu Thr Gly Pro Leu Ala Ala Pro Val Thr Leu Pro  
70 75 80

Gly Val Ala Ala Leu Leu Pro Pro Gly Ala Ala Gly Ser His Gly Thr  
85 90 95

Gly Thr Ala Met Thr Thr Ala Thr Ser Thr Leu Pro Gly Gly Ala  
100 105 110

Val Pro Pro Val Ala Ala Ala Gly Ala Gly Ala Val Val Ala Ser Ser  
115 120 125 130

Thr Ala Thr Thr Ala Gly Pro Gly Ala Ala Ser Gly Gly Thr Val Leu  
135 140 145

Pro Thr Leu Gly Val Val Leu Gly Gly Gly Ala Cys Thr Leu Cys  
150 155 160

Ala Ala Met Cys Pro Ala Gly Val Ala Gly Ala Gly Ser Thr Thr Thr  
165 170 175

Leu Gly Val Pro Ala Pro Ala Ile Thr Ala Ala Leu Ala Ala Ala Ala  
180 185 190

Pro Ser Ala Ala Leu Ser Ala Ser Ala Ala Leu Thr Leu Met Ala Met  
195 200 205 210

Cys Pro Pro Ala Thr Leu Ser Ser Gly Ala Ala Ser Pro Pro Cys Ala  
215 220 225

Leu Pro Thr Ala Gly Gly Thr Val Ser Thr Gly Thr Thr Ala Leu  
230 235 240

Ala Leu Thr Thr Gly Thr Gly Pro Gly Ala Ala Leu Gly Pro Val Gly  
245 250 255

Gly Val Gly Thr Val Ala Gly Leu Leu Ala Ala Leu Thr Gly Gly Ala  
260 265 270

Val Ala Ala Gly Thr Gly Thr Ala Ala Thr Leu Ala Ser Ala Pro Ala  
275                    280                    285                    290

Thr Pro Pro Leu Ala Ala Thr Pro Thr Ala Ala Pro Ser His Ala Ala  
295                    300                    305

Thr Met Val Pro Ile Pro Ala Ala Leu Gly Leu Pro Ala Ala Thr Ala  
310                    315                    320

Leu Ala Pro Leu Leu Pro Ala Gly Ala Ala Leu Thr Val Ala Ser Leu  
325                    330                    335

Leu Val Pro Pro Ser Gly His Met Thr Val Gly Leu Leu Ala Cys Ser  
340                    345                    350

Gly Leu Gly Ala Val Ala Val Leu Val Ala Ala Ala Val Gly Pro Leu  
355                    360                    365                    370

Gly Pro Cys Gly Gly Val Ala Gly Val Cys Gly Leu Ser Ala Pro Val  
375                    380                    385

Gly Ser Gly Thr Thr Ala Ala Gly Ala Gly Gly Gly Ala Pro Ala Leu  
390                    395                    400

Cys Gly Pro Val Pro Ser Gly  
405

<210> 16  
<211> 332  
<212> PRT  
<213> Myceliophthora thermophila

<220>  
<221> mat\_peptide  
<222> (1)..()

<400> 16

Ala Leu Thr Tyr Arg Gly Val Asp Trp Ser Ser Val Val Val Glu Glu  
1                    5                    10                    15

Arg Ala Gly Val Ser Tyr Lys Asn Thr Asn Gly Asn Ala Gln Pro Leu  
20                    25                    30

Glu Asn Ile Leu Ala Ala Asn Gly Val Asn Thr Val Arg Gln Arg Val  
35 40 45

Trp Val Asn Pro Ala Asp Gly Asn Tyr Asn Leu Asp Tyr Asn Ile Ala  
50 55 60

Ile Ala Lys Arg Ala Lys Ala Ala Gly Leu Gly Val Tyr Ile Asp Phe  
65 70 75 80

His Tyr Ser Asp Thr Trp Ala Asp Pro Ala His Gln Thr Met Pro Ala  
85 90 95

Gly Trp Pro Ser Asp Ile Asp Asn Leu Ser Trp Lys Leu Tyr Asn Tyr  
100 105 110

Thr Leu Asp Ala Ala Asn Lys Leu Gln Asn Ala Gly Ile Gln Pro Thr  
115 120 125

Ile Val Ser Ile Gly Asn Glu Ile Arg Ala Gly Leu Leu Trp Pro Thr  
130 135 140

Gly Arg Thr Glu Asn Trp Ala Asn Ile Ala Arg Leu Leu His Ser Ala  
145 150 155 160

Ala Trp Gly Ile Lys Asp Ser Ser Leu Ser Pro Lys Pro Lys Ile Met  
165 170 175

Ile His Leu Asp Asn Gly Trp Asp Trp Gly Thr Gln Asn Trp Trp Tyr  
180 185 190

Thr Asn Val Leu Lys Gln Gly Thr Leu Glu Leu Ser Asp Phe Asp Met  
195 200 205

Met Gly Val Ser Phe Tyr Pro Phe Tyr Ser Ser Ser Ala Thr Leu Ser  
210 215 220

Ala Leu Lys Ser Ser Leu Asp Asn Met Ala Lys Thr Trp Asn Lys Glu  
225 230 235 240

Ile Ala Val Val Glu Thr Asn Trp Pro Ile Ser Cys Pro Asn Pro Arg  
245 250 255

Tyr Ser Phe Pro Ser Asp Val Lys Asn Ile Pro Phe Ser Pro Glu Gly

260

265

270

Gln Thr Thr Phe Ile Thr Asn Val Ala Asn Ile Val Ser Ser Val Ser  
 275 . 280 285

Arg Gly Val Gly Leu Phe Tyr Trp Glu Pro Ala Trp Ile His Asn Ala  
 290 295 300

Asn Leu Gly Ser Ser Cys Ala Asp Asn Thr Met Phe Ser Gln Ser Gly  
 305 310 315 320

Gln Ala Leu Ser Ser Leu Ser Val Phe Gln Arg Ile  
 325 330

<210> 17  
<211> 1008  
<212> DNA  
<213> Thermoascus aurantiacus

<220>  
<221> CDS  
<222> (1)..(1005)

<220>  
<221> sig\_peptide  
<222> (1)..(96)

<220>  
<221> mat\_peptide  
<222> (97)..(1005)

<400> 17  
atg aag ctc ggc tct ctc gtg ctc gct ctc agc gca gct agg ctt aca 48  
Met Lys Leu Gly Ser Leu Val Leu Ala Leu Ser Ala Ala Arg Leu Thr  
-30 -25 -20

ctg tcg gcc cct ctc gca gac aga aag cag gag acc aag cgt gcg aaa 96  
Leu Ser Ala Pro Leu Ala Asp Arg Lys Gln Glu Thr Lys Arg Ala Lys  
-15 -10 -5 -1

gta ttc caa tgg ttc ggt tcg aac gag tcc ggt gct gaa ttc gga agc 144  
Val Phe Gln Trp Phe Gly Ser Asn Glu Ser Gly Ala Glu Phe Gly Ser  
1 5 10 15

cag aac ctt cca gga gtc gag gga aag gat tat ata tgg cct gat ccc 192  
Gln Asn Leu Pro Gly Val Glu Gly Lys Asp Tyr Ile Trp Pro Asp Pro  
20 25 30

aac acc att gac aca ttg atc agc aag ggg atg aac atc ttt cgt gtc 240  
Asn Thr Ile Asp Thr Leu Ile Ser Lys Gly Met Asn Ile Phe Arg Val  
35 40 45

ccc ttt atg atg gag aga ttg gtt ccc aac tca atg acc ggc tct ccg Pro Phe Met Met Glu Arg Leu Val Pro Asn Ser Met Thr Gly Ser Pro	288
50 55 60	
gat ccg aac tac ctg gca gat ctc ata gcg act gta aat gca atc acc Asp Pro Asn Tyr Leu Ala Asp Leu Ile Ala Thr Val Asn Ala Ile Thr	336
65 70 75 80	
cag aaa ggt gcc tac gcc gtc gtc gat cct cat aac tac ggc aga tac Gln Lys Gly Ala Tyr Ala Val Val Asp Pro His Asn Tyr Gly Arg Tyr	384
85 90 95	
tac aat tct ata atc tcg agc cct tcc gat ttc cag acc ttc tgg aaa Tyr Asn Ser Ile Ile Ser Ser Pro Ser Asp Phe Gln Thr Phe Trp Lys	432
100 105 110	
acg gtc gcc tca cag ttt gct tcg aat cca ctg gtc atc ttc gac act Thr Val Ala Ser Gln Phe Ala Ser Asn Pro Leu Val Ile Phe Asp Thr	480
115 120 125	
aat aac gaa tac cac gat atg gac cag acc tta gtc ctc aat ctc aac Asn Asn Glu Tyr His Asp Met Asp Gln Thr Leu Val Leu Asn Leu Asn	528
130 135 140	
cag gcc gct atc gac ggc atc cgt tcc gcc gga gcc act tcc cag tac Gln Ala Ala Ile Asp Gly Ile Arg Ser Ala Gly Ala Thr Ser Gln Tyr	576
145 150 155 160	
atc ttt gtc gag ggc aat tcg tgg acc ggg gca tgg acc tgg acg aac Ile Phe Val Glu Gly Asn Ser Trp Thr Gly Ala Trp Thr Trp Thr Asn	624
165 170 175	
gtg aac gat aac atg aaa agc ctg acc gac cca tct gac aag atc ata Val Asn Asp Asn Met Lys Ser Leu Thr Asp Pro Ser Asp Lys Ile Ile	672
180 185 190	
tac gag atg cac cag tac ctg gac tct gac gga tcc ggg aca tca gcg Tyr Glu Met His Gln Tyr Leu Asp Ser Asp Gly Ser Gly Thr Ser Ala	720
195 200 205	
acc tgc gta tct tcg acc atc ggt caa gag cga atc acc agc gca acg Thr Cys Val Ser Ser Thr Ile Gly Gln Glu Arg Ile Thr Ser Ala Thr	768
210 215 220	
cag tgg ctc agg gcc aac ggg aag aag ggc atc atc ggc gag ttt gcg Gln Trp Leu Arg Ala Asn Gly Lys Lys Gly Ile Ile Gly Glu Phe Ala	816
225 230 235 240	
ggc gga gcc aac gac gtc tgc gag acg gcc atc acg ggc atg ctg gac Gly Gly Ala Asn Asp Val Cys Glu Thr Ala Ile Thr Gly Met Leu Asp	864
245 250 255	
tac atg gcc cag aac aca gac gtc tgg act ggc gcc atc tgg tgg gcg Tyr Met Ala Gln Asn Thr Asp Val Trp Thr Gly Ala Ile Trp Trp Ala	912
260 265 270	

gcc ggg ccg tgg tgg gga gac tac ata ttc tcc atg gag ccg gac aat		960
Ala Gly Pro Trp Trp Gly Asp Tyr Ile Phe Ser Met Glu Pro Asp Asn		
275	280	285
ggc atc gcg tat cag cag ata ctt cct att ttg act ccg tat ctt tga		1008
Gly Ile Ala Tyr Gln Gln Ile Leu Pro Ile Leu Thr Pro Tyr Leu		
290	295	300
<210> 18		
<211> 335		
<212> PRT		
<213> Thermoascus aurantiacus		
<400> 18		
Met Lys Leu Gly Ser Leu Val Leu Ala Leu Ser Ala Ala Arg Leu Thr		
-30	-25	-20
Leu Ser Ala Pro Leu Ala Asp Arg Lys Gln Glu Thr Lys Arg Ala Lys		
-15	-10	-5
		-1
Val Phe Gln Trp Phe Gly Ser Asn Glu Ser Gly Ala Glu Phe Gly Ser		
1	5	10
		15
Gln Asn Leu Pro Gly Val Glu Gly Lys Asp Tyr Ile Trp Pro Asp Pro		
20	25	30
Asn Thr Ile Asp Thr Leu Ile Ser Lys Gly Met Asn Ile Phe Arg Val		
35	40	45
Pro Phe Met Met Glu Arg Leu Val Pro Asn Ser Met Thr Gly Ser Pro		
50	55	60
Asp Pro Asn Tyr Leu Ala Asp Leu Ile Ala Thr Val Asn Ala Ile Thr		
65	70	75
		80
Gln Lys Gly Ala Tyr Ala Val Val Asp Pro His Asn Tyr Gly Arg Tyr		
85	90	95
Tyr Asn Ser Ile Ile Ser Ser Pro Ser Asp Phe Gln Thr Phe Trp Lys		
100	105	110
Thr Val Ala Ser Gln Phe Ala Ser Asn Pro Leu Val Ile Phe Asp Thr		
115	120	125
Asn Asn Glu Tyr His Asp Met Asp Gln Thr Leu Val Leu Asn Leu Asn		

130	135	140
Gln Ala Ala Ile Asp Gly Ile Arg Ser Ala Gly Ala Thr Ser Gln Tyr		
145	150	155
Ile Phe Val Glu Gly Asn Ser Trp Thr Gly Ala Trp Thr Trp Thr Asn		
165	170	175
Val Asn Asp Asn Met Lys Ser Leu Thr Asp Pro Ser Asp Lys Ile Ile		
180	185	190
Tyr Glu Met His Gln Tyr Leu Asp Ser Asp Gly Ser Gly Thr Ser Ala		
195	200	205
Thr Cys Val Ser Ser Thr Ile Gly Gln Glu Arg Ile Thr Ser Ala Thr		
210	215	220
Gln Trp Leu Arg Ala Asn Gly Lys Lys Gly Ile Ile Gly Glu Phe Ala		
225	230	235
240		
Gly Gly Ala Asn Asp Val Cys Glu Thr Ala Ile Thr Gly Met Leu Asp		
245	250	255
Tyr Met Ala Gln Asn Thr Asp Val Trp Thr Gly Ala Ile Trp Trp Ala		
260	265	270
Ala Gly Pro Trp Trp Gly Asp Tyr Ile Phe Ser Met Glu Pro Asp Asn		
275	280	285
Gly Ile Ala Tyr Gln Gln Ile Leu Pro Ile Leu Thr Pro Tyr Leu		
290	295	300